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A SUMMARY
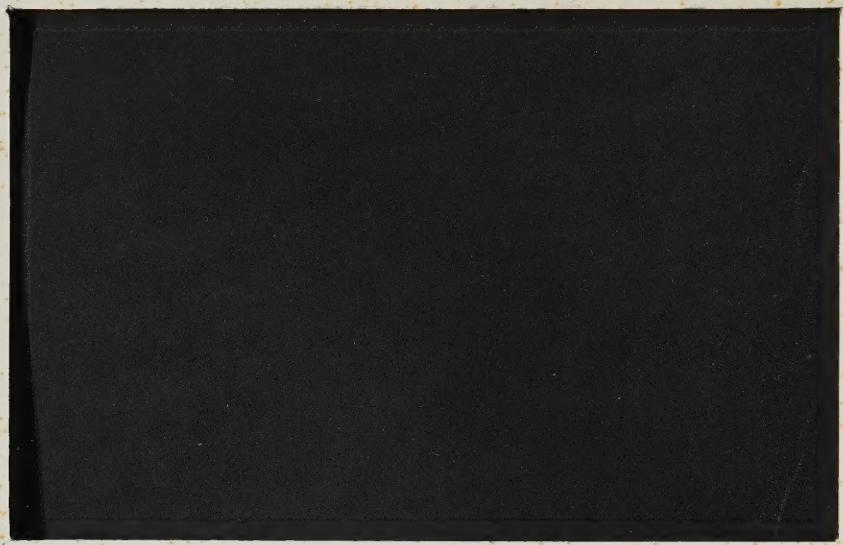
Number 5

Ministry of
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Research Branch
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Research Branch

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Minister   Deputy Minister

UNION-NONUNION WAGE DIFFERENTIALS IN ONTARIO:

A SUMMARY

This study examines the role of unions in wage deter-
mination. Three possible types of union effects on wages may be
distinguished. First, unions may change the general level of
money or real wages throughout the economy. Second, they may
influence the rate at which general money wages are increasing
over time. Finally, they may alter the wages of unionized labour
relative to nonunionized labour. Each of these effects is quite
distinct. In the present study the main concern is the last of
these, that is, the union role in shaping the wage structure.
As a by-product, the role of other factors in determining relative
wages is considered as well.

Understandably, the techniques used to estimate the
independent impact of unionism and other factors on wages are
somewhat complex. In this summary, only the substantive results
of the study are presented. The discussion of the analytical
models and difficulties in statistical interpretation is kept to
a minimum. Readers interested in a more detailed description of
the methodology and interpretations of the results should consult
the complete study.

The Literature

Despite the apparent importance of the issue, there have
been no general studies of union effects on relative wages in
Canada. For this reason, and perhaps reflecting the division of
opinion among economists, the three latest Canadian textbooks on
labour economics have taken the same essentially agnostic view on
the question of union impact.[1]

Perhaps the authors of these books have been over-cautious
in making judgements. In the United States, where the industrial
relations system is similar in many respects to that in Canada,

1. Sylvia Ostry and Mahamood A. Zaidi, Labour Economics in Canada,
   Vol. II of Labour Policy and Labour Economics in Canada (Second
   ed.; Toronto: Macmillan of Canada, 1972), pp. 310-14; J. Tait
   Montague, Labour Markets in Canada: Process and Institutions
   (Scarborough, Ontario: Prentice-Hall of Canada, 1970), Passim,
   pp. 211-39; Stephen G. Peitchinis, Canadian Labour Economics:
   An Introductory Analysis (Toronto: McGraw-Hill of Canada, 1970),
   pp. 311-12, 436-41.

an extensive literature exists. In 1963, Professor H.G. Lewis
published an exhaustive examination of the studies available at the
time.[2] He concluded that during the second half of the 1950's,
the union-nonunion wage differential averaged 10 to 15 per cent.
This estimate has since served as the benchmark against which the
results of other studies have been compared.

Several studies in the United States since 1963 have
produced higher estimates of the union impact on relative wages,
mainly in the range of 20 to 30 per cent.[3] Most of these studies
use industry aggregated data (i.e. average wages in an industry).
However, the significance of these results is not clear as the use
of industry aggregated data may impart an upward bias to the
estimates. This would be the case, for example, if a strong
positive association exists between the extent of union organization
in an industry and the wage gaining ability of unions in that
industry. The few studies that use the preferred methodology
based on observations of the wages paid by individual establishments
or to individual workers show both high and low estimates. The low
estimates, which are in the majority, are approximately the same
as those originally suggested by Lewis. Nonetheless, the frequent
high estimates have produced considerable uncertainty concerning
the magnitude of the overall union effect on relative wages in the
United States.

Two other characteristics of the literature warrant
mention. First, only limited information is available on variations
in the ability of different unions to affect wages. For instance,
there is little evidence on the extent to which a union's wage
gaining ability is enhanced by being located in an industry where
the employers enjoy monopoly power on the product market or where
all or almost all the employers are organized. Second, none of
the previous studies takes into account the likely possibility
that unionization may affect the wages paid by nonunion firms.

The Data

A unique set of Canadian data permits a highly disaggregated
approach to analysing union impact on wages. A tape from the 1969
Canada Department of Labour Occupational Wage Rate Survey, provides

2. H.G. Lewis, Unionism and Relative Wages in The United States
   (Chicago: The University of Chicago Press, 1963).

3. These studies are described in detail in Chapter 1 of Starr,
   Union-nonunion Wage Differentials.

information on union status, wage rates, employment, location, industry and other characteristics for individual establishments. The wage rate and employment information is for a set of specified occupations, some of which are found in a wide range of industries. For given broad skill level categories, those occupations for which the response from establishments was greatest were chosen for the study. The questionnaire also asks for a basic wage rate, that is, the lowest hourly wage rate after a probationary period paid to labourers or equivalent unskilled employees. As virtually all establishments report such a rate, this "occupation" is also included. Although the survey covers many industries, only those in manufacturing are considered due to a lack of supplementary data for other industries.

Data on employment, wages, and union status for the selected occupations and basic rates are provided in Table 1. It can be seen that, particularly for the blue-collar occupations, there is a large number of reporting establishments in each of the cells. Only in the case of unionized white-collar occupations are there fewer than 100 observations. Moreover, the coverage of the survey is quite high, being virtually complete for the larger establishments. The establishments responding to the survey account for over 90 per cent of manufacturing employment in Ontario.

The Analytical Approach

As can be seen from Table 1, average wage rates in union establishments are typically higher than those in nonunion establishments. For unskilled production workers, the difference is approximately 20 per cent. But not all of this difference may be attributable to unionism. Other factors which influence wage rates (e.g. size of firm, capital intensity, etc.) may be of different importance for union and nonunion establishments. After these factors are taken into account, the remaining wage differences attributable to unionism may be considerably higher or lower than those indicated in Table 1. Another weakness in the comparisons embodied in this table is that, as they are based on overall averages, no indication is given of variations in union effects. In other words, from the table it is impossible to discover the conditions favourable to relatively large union effects on wage levels.

The technique used here for distinguishing the effects of unionization from the influence of other factors that may contribute to wage differentials is multiple linear regression analysis. The wage rate levels in individual establishments are related, through an equation, to a number of wage influencing factors. These factors, for instance, include the union status of the plant. Under ideal conditions, the regression technique

TABLE 1

UNION AND NONUNION WAGE RATES IN MANUFACTURING INDUSTRIES IN ONTARIO 1969

Occupation	Union			Nonunion		
	Establish-ments	Employees	Average Wage Rate	Establish-ments	Employees	Average Wage Rate
			$ per hour			$ per hour
Basic Rates(a)						
Male	1,950	395,705(b)	2.54	1,798	111,960(b)	2.10
Female	1,950		2.18	1,798		1.78
Unskilled Blue-Collar						
Cleaner	970	4,477	2.70	547	1,054	2.29
Labourer, Production	779	12,086	2.57	446	2,795	2.16
Labourer, Non-Production	510	5,151	2.72	225	891	2.32
Semi-Skilled Blue-Collar						
Shipper	1,337	6,800	2.77	1,064	2,700	2.51
Industrial Truck Operator	822	6,261	2.98	325	837	2.69
Truck Driver, Heavy Truck	483	2,761	3.20	339	1,144	2.73
Skilled Blue-Collar						
Electrician	708	3,829	3.78	187	526	3.71
Machinist	518	3,089	3.61	220	645	3.42
Mechanic (Machine Repair)	816	5,686	3.55	415	1,092	3.09
Welder	446	2,414	3.53	182	525	3.17
			$ per week			$ per week
White-Collar Female						
Bookkeeping Machine Operator	45	91	92.83	765	1,023	86.07
Junior Typist	84	455	84.58	913	2,024	74.53
Senior Secretary	125	385	122.02	1,358	3,053	107.83
White-Collar Male						
Senior Accounting Clerk	88	179	135.10	696	1,299	136.86
Order Clerk	70	192	123.94	817	1,725	121.06
Senior Clerk	85	421	137.73	589	2,106	147.04

(a) The basic rate is defined as the rate paid to labourers or equivalent unskilled employees after termination of a learning or probationary period, if any.

(b) Relates to total non-office employment in the establishment.

SOURCE: Canada Department of Labour, Occupational Wage Rate Survey.

allows us to identify the independent role that each of the
factors plays in influencing wages after taking into account the
influences attributable to all other factors. More specifically,
the coefficients in the regression equations, estimated from the
data at hand, can be used to calculate the changes in wages
associated with a given change in one of the factors or variables,
with the influence of all other factors being held constant. In
addition, calculated statistics indicate the level of confidence
that can be placed in the relationships appearing in the equations.

The Variables

        The factors or variables appearing in the equations fall
into two groups. The first set of variables captures some of the
variation in wage rates that would arise in the absence of unionism.
These are called control variables. The second set relates to the
conditions under which union effects on wages will be large or
small. These are called union impact variables.

        Under competitive labour market conditions, wage rates for
a given occupation will generally be the same for all establishments
in all industries in a given local labour market. The only
exceptions will be wage variations reflecting quality differences
between workers in the same occupational class, differences in
working conditions between establishments and short-run shifts in
the supply and demand for labour. To capture these influences, the
control variables include indicators of the regional location of
the establishment, whether or not it is located in a large city,
the employee size of the establishment, employment growth in the
industry of the establishment and the working conditions in the
establishment as reflected by the type of industry (durable as
opposed to non-durable goods) and the proportion of males in
production worker employment.[4]

        The union effect on wages is captured primarily by a
variable indicating the union status of the establishment, that is,
whether or not there exists a collective agreement covering non-
office employees. Additional union impact variables reflect the
expected employment impact of a given wage change (the elasticity
of demand for union labour), the product market structure of the

4. As it was not possible to take account of variations in
    fringe benefit levels among establishments, the estimates
    of union effects are probably biased downwards. Also it was
    not possible to include a measure of variations in labour
    quality within the detailed occupational classes. But
    judging from the results of other studies, this omission
    probably has not affected the results materially.

industry, and profit levels. Variations in the elasticity of
demand for labour have been captured in part by using as variables
the extent of union organization in the industry and the importance
of labour costs (the proportion of wages in value-added). The
product market structure has been quantified through a measure of
the degree to which the industry's output is concentrated in the
largest firms in the industry, the employee size of the establish-
ment, and the average employee size of all establishments in the
industry. Profits were measured alternatively by industry after-
tax rates of return on equity assets and by crude estimates of
profits per production worker man-hour.

The Male Basic Labour Rate

The study singles out the male basic (unskilled) labour
rate for extensive analysis as this wage rate is available from
all establishments responding to the survey and is often identi-
fied as a key bench mark rate in wage administration programmes.
Under the assumption that the union effect is constant for all
establishments, the linear regression equation indicates that the
inter-establishment union-nonunion wage differential averages
18 cents per hour for male unskilled labour. (In relative
terms, the differential turns out to be 9 per cent   Thus it
appears that when factors other than unionism are taken into
account, the differences between union and nonunion wages
appearing in Table 1 are reduced considerably (from 44 cents, or
21 per cent).

Some of the control variables appear to play a major role
in wage determination. For example, the data reveal a strong
regional pattern in wages. The Eastern Ontario, Lake Ontario,
Midwestern Ontario and Georgian Bay economic regions are low wage
areas. The wage differential between these areas and other parts
of the province is 20 cents per hour, or more than the average
effect attributable to unionism. On the other hand, once this
regional effect is taken into account, there is little or no wage
advantage associated with location in a major city.

Somewhat surprisingly, durable good manufacturing
industries do not appear to pay high wages. Indeed these industries
are most often associated with a wage disadvantage, compared to
non-durable manufacturing, of from one to nine cents per hour.
The reason for this unusual result is that the analysis also
includes another measure of working conditions. Many durable
good manufacturing industries have a high proportion of males
among production workers, and this variable has a very powerful
influence on wages, possibly the most powerful of all those
considered in the study. An increase in the ratio of males in
the plant from 50 to 100 per cent, a range that covers a majority

of manufacturing industries, is associated with an increase in
wages of 44 cents per hour or an increase of 25 per cent.

Rapid employment growth in an industry has the expected
positive impact on wages, but the effects are small. For unskilled
male labour, the difference in wages between establishments in
industries with relatively high and low employment growth rates
is only 4 per cent.[5]

Finally, the widely observed association between plant
size and wage rate levels is found to be present. The large
magnitude of the plant size effects and the non-linear pattern
are displayed in the following tabulation which shows differentials
relative to a plant with twenty non-office employees:

Non-Office Employees	Wage Differentials (Cents per hour)
20	0
50	7
100	13
200	18
500	26
1000	31

When union effects are allowed to vary, three union impact
variables are found to be important. Union wage rates tend to be
high in industries where wages are a small proportion of value-
added, industry production is concentrated in a few firms and there
is a high degree of union organization in the industry. An increase
in each of these variables over its predominant range (i.e. a range
covering at least 80 per cent of the establishments in the sample)
is associated with the following wage changes:

Source of Wage Variation	Wage Change (Cents per hour)
Wages as a proportion of value-added	37
Extent of union organization in the industry	22
Product market concentration	9

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5. The range between the high and low values used in the
    calculation is approximately one standard deviation above and
    below the mean growth rate.

Notice the comparatively small role of the product market structure in wage determination. It would appear that many concentrated industries that pay high wages do so primarily because they are often highly unionized and have relatively low wage costs.

The role of the other union impact variables is not as pronounced. For example, wages rise somewhat faster in relation to plant size in union as compared with nonunion plants. But this difference in behaviour is not exceptionally large and, in fact, is just barely significant according to conventional statistical tests. In other words, there is only weak support for the view that unions are more successful in raising wages in large plants than in small plants. However, it must be noted that unionism accounts for at least part of the observed relationship between wages and plant size. When the union impact variables are added, the independent effect of plant size on wages is perhaps one half to one third smaller than indicated above.

The role of profits in wage determination does not appear to be pronounced. It is true that industries that are more profitable do tend to pay higher wages. But this relationship is substantially weakened when other factors are considered in the wage determination equations and is not statistically significant judged by the usual tests. Union wages appear to be high in profitable industries largely because these industries also tend to have a high degree of union organization, a low proportion of wage costs in value-added and a concentrated market structure. Profitability as such would appear to be less important, although again the evidence does suggest at least some positive impact on wages.[6]

The analysis is quite clear with respect to average plant size in an industry. This variable has virtually no effect on wages. Either it is a poor proxy for barriers to entry into an industry or this factor plays no role once other influences on wages are taken into account.

In order to gain an impression on the extent of variation in union effects, the regression equations were used to calculate

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6. These findings of weak profit effects must be qualified. The data sources used to measure profits may be subject to considerable measurement error and this may bias results towards showing no relationship between profits and wages. It also should be mentioned that the analysis is based on the assumption that only a proportion and not all excess profits are absorbed in wages.

the distribution of union effects in terms of employees. This
distribution shows a substantial concentration about the mean value
of 27 cents per hour. About 50 per cent of the union employees
in the unskilled labour category receive wages that exceed those
of comparable nonunion employees by 20 to 29 cents per hour.
On the other hand, just 12 per cent of unskilled union members
receive as much as 50 cents or more per hour in excess of wages
paid to comparable nonunion workers. Similarly, just 11 per cent
of union members receive less than 10 cents per hour above
comparable nonunion workers.

The above distribution indicates also that the average
union-nonunion wage differential in terms of employees is somewhat
larger than the average inter-establishment differential. The
relative differential in terms of employees is 14 per cent compared
with an inter-establishment relative differential of under 10 per
cent. This difference arises because the larger unionized
establishments are concentrated in those industries in which the
union effect on wages is above average.

The Female Basic Labour Rate

The pattern of wage variation for unskilled female workers
is quite similar to that for unskilled males. Among the control
variables, there again is evidence of a strong regional pattern in
wages with the Eastern Ontario, Lake Ontario, Midwestern Ontario
and Georgian Bay economic regions being low wage areas, although
the variation is not quite as large as for males.[7]

Following the pattern for males, being in a large city,
a durable goods manufacturing industry or an industry with rapid
employment growth appears to have little or no effect, whereas
plant size and the ratio of males in the plant show marked
influences on female wages.

In absolute terms, the average inter-establishment union-
nonunion wage differential for unskilled females is 13.5 cents
per hour or noticeably below that for males. But the low wages of
females results in the relative differential being almost identical
for both groups - 8.0 per cent for unskilled females and 9.0 per
cent for unskilled males.

7. A minor difference does appear in the northern part of the
   province which is a high wage area for males but a low wage
   area for females in manufacturing. This probably arises
   because in this part of the province the relatively high-
   paying resource industries provide an alternate source of
   employment for males but not for females.

The similarity in results between males and females extends to the union impact variables. Again a high degree of union organization in an industry, a concentrated product market structure and a low proportion of wages in value-added are associated with high union wages. Also, the evidence does not indicate a strong impact of profits on female wages. The only differences are that for females the proportion of wages in value-added is not as dominant a factor as for males and plant size has an appreciable and statistically significant effect on a union's wage gaining ability in the case of females.

The union impact on female wages does appear quite varied. The calculated distribution of union effects in terms of female union members is less concentrated about the mean than in the case of males. Union effects throughout the range of 0 to 40 cents per hour are quite common. On the other hand, the calculated distribution for female union members shows fewer extreme values. Less than 12 per cent of female union members are subject to effects outside the above range.

As in the case of males, the female union-nonunion wage differential in terms of employees is greater than the differential in terms of establishments. Taking account of the distribution of female union members raises the absolute differential to 20.0 cents per hour. In relative terms, the differential increases modestly to 12.2 per cent. In both cases, the estimated differentials turn out to be remarkably close to those found for males, although slightly smaller.

In addition to the similarity of union impact on both male and female unskilled wage rates documented throughout the study, about the same proportion of male and female production workers are union members.[8] Therefore, the implication of the findings is that unionism has not materially affected the degree of inequality between male and female wages in manufacturing.

Union-Nonunion Wage Differentials by Skill Level

There is no concensus on whether unions have widened or narrowed wage inequalities among various grades of production workers. For instance, evidence has been given to support the view that unions, taking advantage of a comparatively inelastic demand,

8. Females comprise 19 per cent of all union members and about 23 per cent of all production workers in Canadian manufacturing. See Statistics Canada, Annual Report of the Minister of Industry, Trade and Commerce Under the Corporations and Labour Unions Return Act, 1969, Part II (Ottawa: Queen's Printer, 1971), p.67.

have had a greater relative effect on the wages of skilled workers than of the unskilled.[9] But this is at odds with the arguments of many who claim that unions are egalitarian institutions that attempt to reduce or eliminate all types of differentials, including those based on skill. The common conception is that industrial unions tend to negotiate equal cents per hour increases for all workers in the bargaining unit, with special skill adjustments or equal per cent increases, across the board, being agreed to only reluctantly.[10] The result, of course, would be a compression of relative skill differentials. Yet another view arises from the belief that skilled workers have generally been in short supply and that, consequently, their wages have been determined largely through the operation of market forces. In contrast, it is argued that the unskilled are typically in abundant supply and therefore unions have an opportunity to raise wages above market levels.[11] If this were the case, the union impact on unskilled wages would be greater than that for skilled in absolute as well as relative terms. Indeed, the union impact on skilled rates would be very small, if not zero.

A consideration of the union-nonunion wage differentials for the occupations appearing in Table 1 sheds light on these various possibilities. The average inter-establishment differentials for the three unskilled occupations range between 14 and 15 cents per hour - just slightly below the estimate for male basic labour. The differentials for the semi-skilled occupations are more varied, ranging from 8 to 16 cents per hour. Nonetheless, they remain substantial. In marked contrast, the differentials for the highly skilled are small. For three of the four skilled occupations, the differentials are less than five cents per hour and not statistically significant according to the usual tests. The other skilled occupation shows a modest differential of 11 cents per hour. These findings suggest that the union impact on relative wages is largely confined to the unskilled and semi-skilled. For the skilled worker, the union effects are small, although probably positive. Overall, unionism in manufacturing has probably been associated with a narrowing of both relative and absolute wage inequalities between the highest and lowest paid categories of production workers.

The examination of the wage variations for the specific occupations appearing in Table 1 provides also a convenient

9. Sherwin Rosen, "Unionism and the Occupational Wage Structure in the United States," International Economic Review, Vol. III No. 2, June 1970, pp. 269-73.

10. For example, see Peitchinis, The Economics of Labour pp. 335-36.

11. Pradeep Kumar, "Differentials in Wage Rates of Unskilled Labour in Manufacturing Industries," Industrial and Labour Relations Review, Vol. 26, No. 1, October 1972, pp. 631-46.

opportunity to check the inferences drawn earlier in the analysis
of male and female basic wage rates. Although they involve
substantially different and smaller samples of establishments,
the specific occupations do display wage patterns quite similar to
those reported previously. First, the approximate size of the
inter-establishment union-nonunion wage differentials for the
unskilled and semi-skilled occupations is only slightly smaller
than that for male basic labour. Second, three union impact
variables are again predominant. A high degree of union organization
in an industry, a low proportion of wages in value-added, and a
concentrated product market structure are all associated with
high or union wages. Only one difference was apparent. For these
specific occupations, there was little evidence to suggest that
wages increase faster with plant size in union as opposed to
nonunion establishments.

The Union Impact on White-Collar Wages

Unionism may affect the wages of white-collar workers in
two ways. First, there may be a direct wage effect associated with
the unionization of these workers. But, quantitatively, the extent
of such direct effects appears limited at the present time. Despite
a recent rapid expansion of white-collar unionization among government
workers and certain professions, inroads in manufacturing have been
few. In the survey used in this study, under 5 per cent of the
manufacturing establishments in Ontario reported having a collective
agreement covering any office employees. In addition to the limited
extent of unionization, it is also not clear what power can be
exercised by organized white-collar workers in manufacturing.

Second, there may be an indirect effect as the unioni-
zation of an employer's blue-collar workers may alter the wage
decisions he takes concerning his unorganized workers. Employers
who grant large increases to their blue-collar workers may feel
compelled to grant similar increases to their unorganized white-
collar workers. Employers may do this out of their sense of
fairness or to prevent discontent among white-collar workers caused
by an erosion of traditional wage differentials. Instances of this
type of behaviour abound in descriptions of employer wage-setting
practices. But the quantitative significance of such indirect
effects may be questioned. Although parallel increases for white
and blue-collar workers may occur occasionally, employers concerned
with profit maximization may not follow this practice when the
result would be wages for office employees that are far in excess
of market rates.

In the study, the magnitudes of both the direct and
indirect effects are estimated for the six white-collar occupations
in Table 1. The few female white-collar workers who work in union

organized offices have a considerable wage advantage. The esti-
mated inter-establishment union-nonunion wage differential for
these workers is about 10 per cent or comparable to that for un-
skilled blue-collar labour. But in the case of male white-collar
workers the effects are small. For two of the three male white-
collar occupations, the differentials, although positive, are
small and not statistically significant. For the other occupation,
the differential is negative. There is no apparent reason for this
difference in union effects by sex. Perhaps it arises because the
male jobs are more senior positions which sometimes do not come
under the terms of collective agreements. It may in part reflect
the previously noted tendency for the union-nonunion wage differen-
tial to decline with skill levels.

There is little evidence that indirect effects of unionism
on white-collar wages are quantitatively significant for either
males or females. In fact, having a union in the plant appears to
slightly depress the wages of the associated white-collar workers.

Perhaps the most intriguing result is the limited role
that the union impact variables play in explaining white-collar
wages. Although the direction of the effects is often as expected,
the relationships are typically quite weak and not statistically
significant. A high degree of union organization in an industry,
a concentrated product market structure, and a low proportion of
wages in value-added, conditions found to be clearly favourable to
a high wage level for blue-collar workers, have very little effect
on the level of white-collar wages. This is further evidence that
indirect union effects on wages are weak, if not totally absent.
The limited role of the union impact variables also sheds light on
an important question of interpretation. Because no strong
relationships with white-collar wages are apparent, we can be
more confident that such factors as product market structure,
degree of union organization in an industry, and labour costs
as indicated by the proportion of wages in value-added are
actually capturing variations in union effectiveness (the inter-
pretation advanced throughout the study) rather than reflecting
a more general casual factor, such as employer ability-to-pay,
which presumably would affect the wages of all workers, white-
collar and blue-collar alike.[12]

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12. Of course, it would be desirable to have further support for
    the interpretation given in the study. In particular, it
    would be desirable to examine the relationships, if any,
    between production worker wages and union impact variables
    during the period prior to the spread of unionism in
    manufacturing.

The Union Impact on Nonunion Employees

The estimates given above, as well as those made in other studies, fail to take account of the possibility that some nonunion employers may raise their wages as a result of unionism. An attempt was made to measure the importance of such effects based on an approach that assumed that nonunion employers may raise their wages in attempts to forestall union organization. If this kind of behaviour is important, nonunion wages would be high in situations where the union impact is potentially high and the probability of union organization is high. In the analysis, this latter probability was indexed by the size of the nonunion firms and the extent of union organization in the industry.

The results were not entirely satisfactory as the estimates derived from the regression equations were not plausible in some respects. Further work would be necessary before calcu-lations could be made of the difference in wages between union workers and those of comparable groups of nonunion workers totally unaffected by unionism. But the analysis did yield indications that in fact the threat of unionization does have at least some effect on nonunion wages. Particularly for unskilled workers, it was found that, all other things being equal:

(i) increases in the degree of union organization in an industry generally are associated with increases in nonunion wages;

(ii) nonunion wages increase more rapidly with plant size at high levels of union organization in an industry than at low levels; and

(iii) nonunion wages are high under circumstances that favour a large union impact on wages.

All these findings are consistent with the view that, at least to some degree, nonunion employers increase their wages in response to the threat of union organization.

Concluding Remarks

Consistent with a number of United States studies, the study found that for basic labour the union-nonunion wage diffe-rential for females closely approximates that for males, but that the differential for the skilled occupations, even in absolute terms, is considerably smaller than the differential for the unskilled and semi-skilled occupations. In fact, the differential for the highly skilled may be zero. However, the skilled occupa-tions probably represent less than one-quarter of all production workers. It would seem, then, that a global estimate of the

union-nonunion wage differential in terms of employees for all
production workers would be only slightly less than the differential
indicated for the unskilled. The assumption that one-quarter of
all production workers are skilled and receive no wage advantage
from unionism, while all the rest follow the pattern of the basic
male rate, yields a global estimate of the differential of
approximately 10 per cent.

Among the control variables, the ratio of males in a plant
has a surprisingly strong influence on wage rate levels. This
raised the question of whether or not a high proportion of females
in a plant is the result, rather than cause of low wages. In
other words, it may be that firms hire a high proportion of females
because, for one reason or another, their wages are low. If this
is the case, the inclusion of this variable in the regression
equations would be wrong and could have the effect of biasing the
estimates of union effects downwards. As a precaution, alternative
calculations were made taking into account this possibility.
Omitting the ratio of males from the male basic rate regressions
has the effect of only slightly increasing the inter-establishment
union-nonunion wage differential to 10 per cent. But the size
of the union impact variables is increased substantially with the
result that the differential in terms of employees rises to 22 per
cent. Under these assumptions, the global union-nonunion differen-
tial in terms of employees was calculated to be approximately 17
per cent.

The two global estimates indicated above probably are
extremes. The actual global differential more than likely falls
in the range of 10 to 17 per cent. It should also be kept in
mind that these estimates do not take into account the impact of
unionism on nonunion firms. As the study suggests that such effects
may be important, the above estimates understate to some extent
the total impact of unionism.

Two additional points should be mentioned. First, the
global estimates of the union-nonunion wage differential are
actually quite close to those originally proposed by Lewis and
those derived from a few recent United States studies using data
for individual establishments or workers. It would appear that
the union effects in Ontario manufacturing are not markedly
different from those in the United States. In light of the
findings of the study, the numerous estimates based on industry
aggregated data, which are typically quite large, appear to be
biased upwards because of their failure to take into account the
strong positive associations that exist between, on the one hand,
the degree of union organization in an industry and, on the other,
union and nonunion wages.

Second, as well as significant average union effects, the study shows substantial variations in union wage levels. The interpretation of these variations given in the study is that they reflect differences in union effectiveness. This is not the only explanation. But regardless of the interpretation, there are strong empirical relationships that signify a highly structured labour market. Within a local labour market there are large differences in the wages paid to workers in a given occupational category. These differences, many of which appear inconsistent with traditional explanations of wage differentials, must be kept in mind when the relative role of competitive market forces and institutional factors are being considered as determinants of the wage structure.